

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

## EXAMINER'S CASE ACTION WORKSHEET

Application No.  
09/964,198



Legal Instrument Examiner

CHECK TYPE OF ACTION

DATE OF COUNT

<input type="checkbox"/> Non-Final Rejection	<input type="checkbox"/> Restriction/Election Only	<input checked="" type="checkbox"/> Final Rejection
<input type="checkbox"/> Ex Parte Quayle	<input type="checkbox"/> Allowance	<input type="checkbox"/> Advisory Action
<input type="checkbox"/> Examiner's Answer	<input type="checkbox"/> Reply Brief Noted	<input type="checkbox"/> Non-Entry of Reply Brief
<input type="checkbox"/> Defective Notice of Appeal	<input type="checkbox"/> Interference Disposal SPE _____ (Approval for Disposal)	<input type="checkbox"/> Suspension (Examiner-Initiated) SPE _____ (initial)
<input type="checkbox"/> Defective Appeal Brief	<input type="checkbox"/> SIR Disposal (use only after FAOM)	<input type="checkbox"/> Supplemental Examiner's Amendment
<input type="checkbox"/> Miscellaneous Office Letter (With Shortened Statutory Period Set)	<input type="checkbox"/> Notice of Non-Responsive Amendment (With One Month Time Period set)	<input type="checkbox"/> Miscellaneous Office Letter (No Response Period Set)
<input type="checkbox"/> Abandonment after BPAI Decision	<input type="checkbox"/> Supplemental Action (excluding Examiner's Answer)	<input type="checkbox"/> Response to Rule 312 Amendment
<input type="checkbox"/> Letter Restarting Period for Response (e.g., Missing References)	<input type="checkbox"/> Interview Summary	<input type="checkbox"/> Authorization to Change Previous Office Action SPE: _____ (Initial)
<input type="checkbox"/> Abandonment	<input type="checkbox"/> Express Abandonment Date: _____	<input type="checkbox"/> Other Specify: _____

Examiner's Name: Phillip Nguyen

AU: 2828



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,198	09/25/2001	Randall K. Bartman	0007975-0014/CIT-3289	1270

23600 7590 09/03/2003

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EXAMINER

NGUYEN, PHILLIP

ART UNIT PAPER NUMBER

2828

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/964,198

Applicant(s)

BARTMAN ET AL.

Examiner

Phillip Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4,6,8,9,11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6,8,9,11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-4, 6, 8-9, and 11-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 fails to define the structure of the external feedback element which renders the claim indefinite and confusing.

Claims 2-4, 6, 8-9, and 11-12 depend on claim 1; therefore they become indefinite as well.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lee et al. ('281). Lee discloses in Figures 5 and 6 a semiconductor laser device which comprises a

Art Unit: 2828

semiconductor optical gain chip 3 to a micromachined silicon bench 9, a silicon dioxide and silicon-oxynitride based waveguide wherein the waveguide terminates in an external feedback element. It is understood that the waveguide 5 as recited in the reference (col. 4, lines 28-32 and col. 6, lines 44-53) is made of silicon dioxide and silicon nitride through a process PECVD which could create silicon oxynitride wherein they are both insulative materials. Lee further discloses an external feedback element 4 which terminates the waveguide 5 as shown in Figure 5. Lee also discloses the step of coupling which comprises using a flip-chip aligner bonder (col. 5, lines 30-37) and using plurality of micromachined stand-offs 20 and 21 to horizontally and vertically align the coupling of said chip to the said waveguide.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-4, 6, and 12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. ('281) in view of Bestwick et al. ('210).

With respect to claims 2 and 3, Lee discloses the claimed invention except for the external feedback element comprising Bragg grating. Bestwick discloses in Figure 1 wherein the feedback element comprises Bragg gratings. For the improvement of the laser, it would have been obvious to the one of ordinary skill in the art at the time the invention was made to provide

the Bragg gratings as the external feedback element as taught by Bestwick for wavelength selective purposes.

With respect to claim 4, Bestwick discloses in Figure 4 the gratings 4 are coupled to a main waveguide trunk 10 and the Bragg gratings are formed by the periodic variation of the refractive index (col. 1, lines 42-44.)

With respect to claim 6, Lee discloses the claimed invention except for the narrow linewidth being tens of kHz range. It would have been obvious to the one of ordinary skill in the art at the time the invention was made to provide the range of the linewidth tens of kHz, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art.

With respect to claim 12, it is obvious that for routine skill in the art to provide a waveguide that has matching mode with gain chip and precisely aligned in order to reduce the loss.

5. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. ('281) in view of Freeman et al. ('793). Lee discloses the claimed invention except for the waveguide comprising 3 layers of silicon-dioxide, silicon-oxinitride, and silicon-dioxide. Freeman discloses a well known waveguide containing of 3 layers arranged in order as recited in Figure 2. Lee further discloses the antireflection coating of the waveguide as recited in abstract. For the improvement of the laser, it would have been obvious to the one of ordinary skill in the art at the time the invention was made to use provide the waveguide as taught by Freeman with anti-reflection coating on its interface layers to reduce the optical loss.

*Response to Arguments*

6. Applicant's arguments filed 8/4/2003 have been fully considered but they are not persuasive because of the following reasons:

First of all, the applicant argues that Lee does not teach "using a plurality micromachined stand-offs to vertically align" the coupling of the gain chip to the waveguide. The argument is believed not persuasive and in error because in Figures 5 and 6, stand-offs 20 and 21 are used for vertically aligning the laser chip, not horizontally or for no purposes (see col. 6, lines 12-14). The accuracy of alignment process argued by the applicant is also not persuasive because of nowhere in claim 1 recites the limitation about allowable accuracy of said alignment process. Finally, the applicant argues that Lee doesn't describe a "waveguide terminates in an external feedback element". Without further descriptions of the external feedback element in the claim, examiner believes that Lee does disclose the photoreceiver 4 as an external feedback element which can be read on this claim. As looking at Figure 5, the waveguide 5 terminates in 3 components which are a trench 15, a semiconductor laser 3, and a photoreceiver 4.

*Citation of Pertinent References*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Lee et al. disclose Method for Fabricating a Hybrid Optical Integrated Circuit Employing SOI Optical Waveguide, U.S. Patent No. 6316281

The patent to Bestwick et al. disclose External Cavity Laser, U.S. Patent No. 6101210

The patent to Freeman et al. discloses Planar Waveguide Chemical Sensor, U.S. Patent No. 6335793

*Conclusion*

8. This is a request for continuation examination (RCE) of applicant's earlier Application No. 09/964198. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.



Art Unit: 2828

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 703-305-4966. The examiner can normally be reached on Monday to Friday from 8:30 AM to 5:30 PM

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip, can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are:


TC2800 Official Before-Final RightFAX - (703) 872-9318

TC2800 Official After-Final RightFAX - (703) 872-9319

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0658.

August 20th, 2003

PN, AU 2828



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